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ABSTRACT:

A transparent film 10 has translucent markings 18 printed on it at well-spaced positions. The film has a pressure sensitive adhesive on the same face as said markings so that it may be stuck over information presented on a sheet of paper e.g. a photograph 22 in a passport, to prevent that information being tampered with. The pressure sensitive adhesive used, is chosen so that attempted removal of the film leads to irreparable damage to either the substrate or the film itself, or both.

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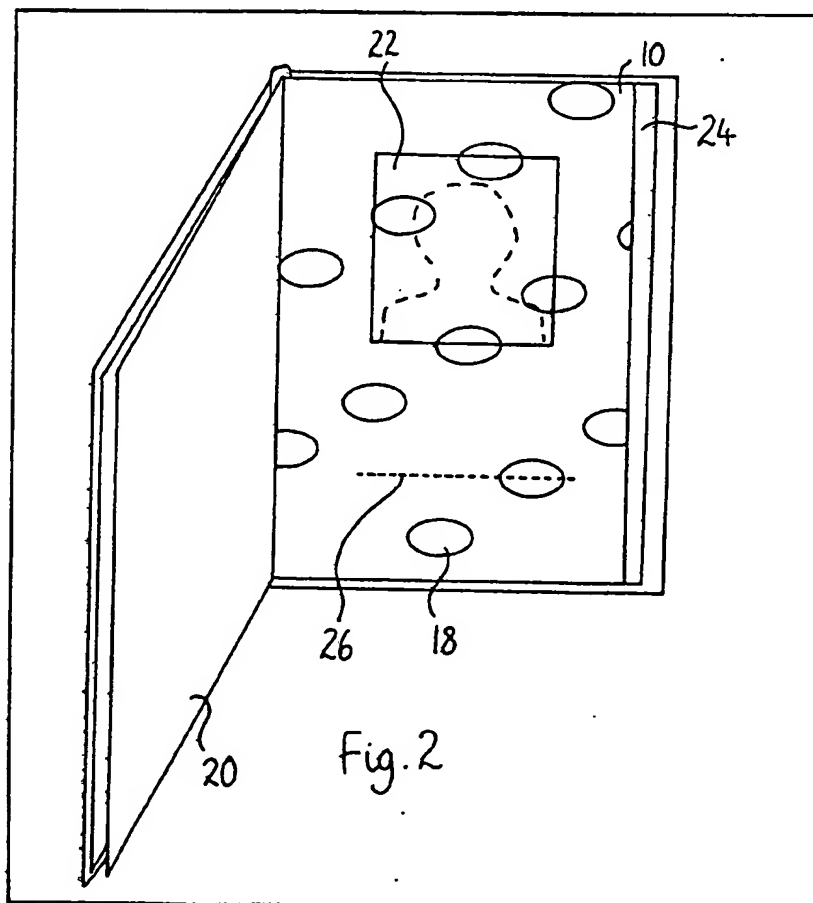
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(54) Self-adhesive transparent film

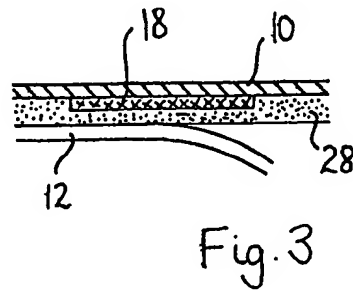
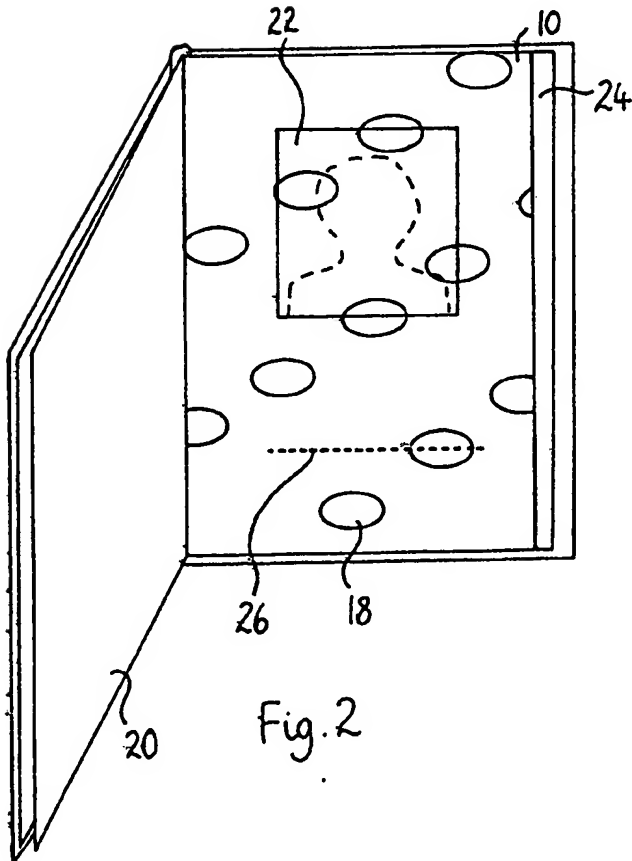
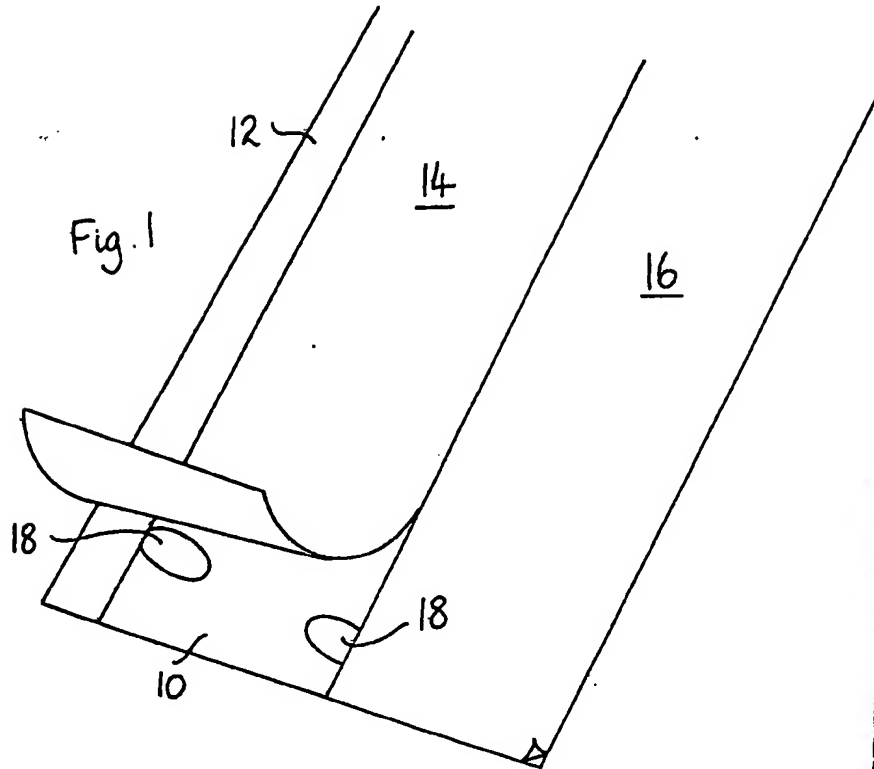
(57) A transparent film 10 has translucent markings 18 printed on it at well-spaced positions. The film has a pressure sensitive adhesive on the same face as said markings so that it may be stuck over information

presented on a sheet of paper e.g. a photograph 22 in a passport, to prevent that information being tampered with. The pressure sensitive adhesive used, is chosen so that attempted removal of the film leads to irreparable damage to either the substrate or the film itself, or both.



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SPECIFICATION

Self-adhesive transparent film

This invention relates to self-adhesive transparent film, for use, for example, in security applications such as protecting photographs and signatures in passports and identity documents.

- Passports and the like have long been a target for the forger. His aim is often to start with a stolen passport, remove the photograph and replace it with another photograph. Various measures have been used by issuing authorities to prevent this abuse. It is known to apply self-adhesive transparent film over the photograph and an area of the paper surrounding the photograph.
- 15 The adhesive used is such that the film cannot be pulled off without taking with it the surface of the paper, and if this happens, the passport cannot then be re-used as the forger desires.

- In some cases however, the ingenuity of forgers has been equal to this development. The present invention is therefore intended to make the task of the forger still more difficult than it is at present.

- According to the present invention, there is provided a transparent film for application to a substrate to protect information on the substrate, the film being treated to enhance its ability to accept a marking applied to it, having translucent markings applied to one face and being coated on the same face with a pressure-sensitive adhesive, the characteristics of the adhesive being such that it will adhere to the substrate in such a way that attempted mechanical removal of the film from the substrate will result either in at least part of the surface of the substrate being removed with the film, or in distortion of the film.

- To make forgery a practical proposition, the forger must be able to separate the substrate and the film, and be able to reuse them both. Both substrate and film will have security markings on them, the absence or falsification of which will cause the forger to be detected. The forger may attempt a "mechanical" or a "chemical" separation, and these alternatives are discussed below.

- To perform their function, the markings on the film must not obscure information on a substrate to which the film is applied, and must make it impossible to tamper with the information without affecting one or more of the markings. The markings are translucent, preferably in a translucent ink, so that they do not obscure any features on the substrate over which the film is applied. There may be a need to have some opaque markings in addition to the translucent markings, and in this case, the opaque markings should be chosen and positioned so as to have a minimal effect in obscuring detail below the film.

- The term "markings" is used in this specification to include any visible and/or tangible effect which is applied to the film by any process, including printing, and which cannot exist except on a parent surface. "Markings" therefore includes for example a graded tint i.e. a venette, applied to the film, as well as printed words or logos or an

- 65 embossed marking or a hot-blocked or foiled marking or a vacuum metallised marking. The markings are however preferably printed on the film, on the side of the film to which the adhesive is applied.

- 70 The ink used to produce the markings is preferably a "fugitive" ink. If a solvent is used in an attempt to remove the film chemically, the fugitive ink will spread on contact with the solvent and will leave a stain on the substrate to indicate that there has been tampering.

- 75 The pressure sensitive adhesive will be a "strong" adhesive so that any attempt at mechanical, as opposed to chemical removal of the film, e.g. by pulling the film away from the substrate with or without the application of heat will result in delamination of the substrate, thus destroying the substrate if the substrate is delaminable, or in distortion of the film, thus destroying the film if the substrate is for example a plastics surface which is not delaminable. The adhesive is preferably a cross-linked acrylic adhesive which is advantageous in that it retains its adhesive properties up to about 50° or more.

- The invention will now be further described, by way of example, with reference to the accompanying drawing, in which:

- Figure 1 shows, from the back, a transparent film according to the invention with a backing sheet partly removed;

- 95 Figure 2 shows an open passport to which a film according to the invention has been applied; and

- Figure 3 is a section through a film in accordance with the invention, on a magnified scale.

- Figure 1 shows a transparent film 10 which is provided with a backing sheet divided into three sections 12, 14, 16. The backing sheet 12, 14, 16 can be pulled off in a conventional manner to expose a surface of the film 10 coated with adhesive. The backing sheet can however be divided into sections different in size and number to those shown, or need not be divided at all.

- The film 10 itself is printed with markings or motifs 18 arranged in spaced apart positions across the film. The criteria for the positioning of these markings will be discussed later. The markings are printed on the underside of the film (i.e. on the same side as the adhesive coating) in a translucent ink. Once the printing has been completed, the adhesive coating is then applied.

- The film 10, a printed marking 18, the adhesive 28 and a backing sheet 12 are shown in the cross-section of Figure 3. It can be seen that the ink which makes up the marking 18 is applied direct to the film 10, and that the adhesive is then applied to the film to cover the markings.

- The transparent film itself, which forms the surface on which the printing and adhesive are applied, can be any of the conventional plastics materials known for this purpose. Polyester and polypropylene are particularly suitable, although other plastics such as pvc and upvc can also be used. To enhance the ability of the film to take

print, a polyester film could have at least one face subjected to a corona discharge, whilst a polypropylene film could have at least one face coated with pdvc.

- 5 The pressure sensitive adhesive has an adhesive power such that, when it has been stuck down on a sheet of paper, removal of the film will remove the surface of the paper at the same time. When the film has been applied to a substrate other than paper, the adhesive will be chosen to provide sufficient adhesive power to ensure that the film will be permanently distorted if attempts are made to remove it from the particular substrate material. The adhesive should not affect inks or photographs, and should not deteriorate.

Once the film has been printed and coated with adhesive, the backing sheet 12, 14, 16 is applied.

- In manufacturing a blank passport booklet, the film 10 is inserted amongst the pages in the appropriate place facing the page to be protected in the passport. The edge 12 of film, adhesive and paper is then bound into the passport with all the pages.

- When the issuing authority issues a passport 20, the holder's photograph 22 is stuck on a page 24 adjacent to the film "page". Possibly the holder may sign as well on the same page on the line 26. The issuing authority then peels off the backing strip 14 and, holding the film with the backing strip 16, presses the film down over the page 24. The backing strip 16 is then removed and the film is completely stuck down.

- It is important that at least one of the markings 18 should be superimposed on the photograph 22 (preferably also on the signature on line 26). The number and arrangement of the markings should therefore be chosen such that the blank spaces on the film between the markings are all smaller than the regulation dimensions of a passport photograph or of whatever information item is to be protected. It may be appropriate if the largest rectangle that can be fitted into a space between markings on the film without overlapping any of the markings has dimensions of 50 mm by 40 mm, when passport photographs are to be protected which have slightly larger dimensions.

Traces of substances which are invisible under ordinary light but which show up under other

- forms of energy such as ultra-violet or infra-red radiation, can be included in the film, to give added security against forging.

CLAIMS

1. A transparent film for application to a substrate to protect information on the substrate, the film being treated to enhance its ability to accept a marking applied to it, having translucent markings applied to one face and being coated on the same face with a pressure-sensitive adhesive, the characteristics of the adhesive being such that it will adhere to the substrate in such a way that attempted mechanical removal of the film from the substrate will result either in at least part of the surface of the substrate being removed with the film, or in distortion of the film.
2. A film as claimed in Claim 1, including a substance which is invisible under normal light, but which is visible under other forms of energy.
3. A film as claimed in Claim 1 or Claim 2, wherein the ink used is a fugitive ink.
4. A film as claimed in any preceding claim, wherein the adhesive retains its adhesive properties up to about 50°C.
5. A film as claimed in any preceding claim, wherein the adhesive is a cross-linked acrylic adhesive.
6. A film as claimed in any preceding claim, wherein the largest rectangle which can be fitted into a space on the film without containing or crossing any marking or part of a marking is 50 mm by 40 mm.
7. A film as claimed in any preceding claim, wherein a backing sheet is applied to the adhesive coated face.
8. A film as claimed in Claim 7, wherein the backing sheet is divided into a narrow strip adjacent one edge of the film, and two broader strips.
9. A booklet having a number of pages and, between at least one pair of adjacent pages, a film as claimed in Claim 8.
10. A transparent film substantially as herein described with reference to the accompanying drawing.
11. A booklet substantially as herein described with reference to the accompanying drawing.

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